

IN THE CLAIMS:

1. (Currently Amended) A method for separating neutral substances from a soap containing the neutral substances, the method comprising the steps of:

(a) providing a mixture comprising (1) the soap containing the neutral substances, (2) water optionally containing sodium sulfate and (3) a C₁-C₁₀ hydrocarbon solvent, and heating the mixture to a temperature of at least 140°C, to obtain a soap phase and a hydrocarbon phase containing the neutral substances, the heating step being conducted in a closed system under pressure, wherein the pressure in the system is at least equal to the vapor pressure of the mixture at the temperature used in the heating step and wherein no alcohol or ketone is used in step (a);

(b) separating the hydrocarbon phase from the soap phase; and

(c) optionally separating the neutral substances from the hydrocarbon phase.

2. (Original) The method of claim 1, wherein the hydrocarbon solvent is selected from the group consisting of hexane, heptane, octane, cyclohexane, methylcyclohexane and mixtures thereof.

3. (Original) The method of claim 1, wherein the temperature is between 140°C and 190°C

4. (Original) The method of claim 3, wherein the temperature is between 165°C and 185°C.

5. (Original) The method of claim 1, wherein the soap, the water and the hydrocarbon solvent are provided in the mixture in a weight ratio of 1 : >1 : >1, based on the dry weight of the soap.

6. (Currently Amended) The method of claim 5, wherein the weight ratio is 1 : >1-3 : 2-6 ~~1 : >1-3 : 2-6~~.

7. (Original) The method of claim 5, wherein the weight ratio is 1 : 2-3 : 3-6.

8. (Original) The method of claim 5, wherein the weight ratio is 1 : 2-3 : 4-5.

9. (Original) The method of claim 1, comprising the further step of reducing the separated hydrocarbon phase produced in step (b) by evaporation.

10. (Original) The method of claim 1, comprising the further step of washing the separated hydrocarbon phase produced in step (b) with water.

11. (Original) The method of claim 9, comprising the further step of washing the reduced hydrocarbon phase produced in said further step with water.

12. (Original) The method of claim 10, wherein said washing step is performed at a temperature of at least 80°C under pressure.

13. (Original) The method of claim 11, wherein said washing step is performed at a temperature of at least 80°C under pressure.

14. (Original) The method of claim 12, wherein the temperature is at least 130°C.

15. (Original) The method of claim 13, wherein the temperature is at least 130°C.

16. (Original) The method of claim 1, wherein said separating step (c) comprises evaporating the hydrocarbon phase to dryness.

17. (Original) The method of claim 1, wherein the neutral substances are selected from the group consisting of sterols, terpene alcohols and fatty alcohols.

18. (Currently Amended) A method for purifying sterols from a soap containing the sterols, the method comprising the steps of:

(a) providing a mixture comprising (1) the soap containing the sterols, (2) water optionally containing sodium sulfate and (3) a C₁-C₁₀ hydrocarbon solvent, and heating the mixture to a temperature of at least 140°C, to obtain a soap phase and a hydrocarbon phase containing the sterols, the heating step being conducted in a closed system under pressure, wherein the pressure in the system is at least equal to the vapor pressure of the mixture at the temperature used in the heating step and wherein no alcohol or ketone is used in step (a);

(b) separating the hydrocarbon phase and the soap phase; and

(c) purifying the sterols from the hydrocarbon phase.

19. (Original) The method of claim 18, wherein the hydrocarbon solvent is selected from the group consisting of hexane, heptane, octane, cyclohexane, methylcyclohexane and mixtures thereof.

20. (Original) The method of claim 18, wherein the temperature is between 140°C and 190°C.

21. (Original) The method of claim 20, wherein the temperature is between 165°C and 185°C.

22. (Original) The method of claim 18, wherein the soap, the water and the hydrocarbon solvent are provided in the mixture in a weight ratio of 1 : >1 : >1, based on the dry weight of the soap.

23. (Original) The method of claim 22, wherein the weight ratio is 1 : 1-3 : 2-6.

24. (Original) The method of claim 22, wherein the weight ratio is 1 : 2-3 : 3-6.

25. (Original) The method of claim 22, wherein the weight ratio is 1 : 2-3 : 4-5.
26. (Original) The method of claim 18, comprising the further step of reducing the separated hydrocarbon phase produced in step (b) by evaporation.
27. (Original) The method of claim 18, comprising the further step of washing the separated hydrocarbon phase produced in step (b) with water.
28. (Original) The method of claim 26, comprising the further step of washing the reduced hydrocarbon phase produced in said further step with water.
29. (Original) The method of claim 27, wherein said washing step is performed at a temperature of at least 80°C under pressure.
30. (Original) The method of claim 28, wherein said washing step is performed at a temperature of at least 80°C under pressure.
31. (Original) The method of claim 29, wherein the temperature is at least 130°C.
32. (Original) The method of claim 30, wherein the temperature is at least 130°C.
33. (Original) The method of claim 18, wherein said purifying step (c) comprises evaporating the hydrocarbon phase to dryness.
34. (Original) The method of claim 18, wherein the hydrocarbon phase additionally contains other neutral substances from the soap, and step (c) further comprises purifying the sterols from the other neutral substances by dissolving the other neutral substances in a solvent mixture comprising methyl ethyl ketone, a C₁-C₆ alkanol and water, and thereafter crystallizing the sterols from the solvent mixture.

35. (Original) The method of claim 34, wherein the methyl ethyl ketone, the C₁-C₆ alkanol and the water are present in the solvent mixture in a weight ratio of 50-80 : 5-40 : 2-20.

36. (Original) The method of claim 35, wherein the weight ratio is 60-70 : 20-35 : 5-10.

37. (Original) The method of claim 34, comprising the further step of washing the sterol crystals with a solvent.

38. (Original) The method of claim 37, wherein the solvent is a mixture comprising methyl ethyl ketone, a C₁-C₆ alkanol and water.

39. (Original) The method of claim 18, wherein step (c) comprises crystallizing the sterols from the hydrocarbon phase by cooling the hydrocarbon phase and thereafter separating the formed crystals from the hydrocarbon phase.

40. (Original) The method claim 39, comprising the further step of washing the crystals and/or recrystallizing the sterols.

41. (Original) The method of claim 40, wherein the sterols are recrystallized in a solvent mixture comprising a hydrocarbon and a C₁-C₆ alkanol.

42. (Original) The method of claim 41, wherein the sterols, the hydrocarbon and the C₁-C₆ alkanol are present in the solvent mixture in a weight ratio of 1 : 1-3 : 1-15.

43. (Original) The method of claim 18, wherein step (c) comprises reducing the hydrocarbon phase by evaporation, mixing the reduced hydrocarbon phase with a C₁-C₆ alkanol and optionally water, and crystallizing the sterols from the mixture.

44. (Original) The method of claim 43, wherein the sterols, the C₁-C₆ alkanol, the hydrocarbon and the water are present in a weight ratio of 1 : 1.5-4 : 0.01-1.0 : 0-0.05, based on the dry weight of the sterols.

45. (Original) The method of claim 44, wherein the weight ratio is 1 : 1.5-4 : 0.01-0.3 : 0-0.02.

46. (Presently Amended) The method of claim 34, wherein the C₁-C₆ alkanol is methanol.

47. (Presently Amended) The method of claim 43, wherein the C₁-C₆ alkanol is methanol.

48. (New) The method of claim 1, wherein the temperature is at least 150°C.

49. (New) The method of claim 1, wherein the temperature is between 150°C and 185°C.

50. (New) The method of claim 18, wherein the temperature is at least 150°C.

51. (New) The method of claim 18, wherein the temperature is between 150°C and 185°C.